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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/628,599	07/28/2000	Ian R. Finlay	12780-1015	3713

7590	02/07/2006

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EXAMINER
LY, ANH

ART UNIT	PAPER NUMBER
2162	

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

		Application No.	Applicant(s)
Office Action Summary		09/628,599	FINLAY ET AL.
		Examiner	Art Unit	
		Anh Ly	2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>10 September 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-22</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-22</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>28 July 2000</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   This Office Action is response to Applicant's Response filed on 09/10/2004.

Response to Arguments

2.   In view of the Appeal Brief filed on 09/10/2004, PROSECUTION IS HEREBY

REOPENED. A new ground rejection set forth below.

        To avoid abandonment of the application, appellant must exercise one of the

following two options:

        (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply

under 37 CFR 1.113 (if this Office action is final); or,

        (2) request reinstatement of the appeal.

        If reinstatement of the appeal is requested, such request must be accompanied

by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130,

1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

3.   Claims 1- 22 are pending this Application.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the
United States before the invention thereof by the applicant for patent, or on an international application
by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this
title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act

of 1999 (AIPA) and the Intellectual Property and High Technology Technical

Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting

directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior

to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5.   Claims 1-8, 10-17 and 19-22 are rejected under 35 U.S.C. 102(e) as being

anticipated by US Patent No.: 5,875,334 issued to Chow et al. (hereinafter Chow).

6.   The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art

under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome

either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in

the reference was derived from the inventor of this application and is thus not the

invention "by another," or by an appropriate showing under 37 CFR 1.131.

With respect to claim 1, Chow teaches a method for pre-processing an access

plan generated for a query in a relational database management system to include said

access plan including a plurality of operation codes, each of said operation codes being

associated with one or more executable functions for performing the query (figs. 1-3,

Pre-processing a SQL query statement is processed through a query compiler for

generating a access executable plan for a database system such as IBM's DB2; this

process requiring a run-time interpreter for looking up local variable; also this

executable plan includes a plurality of SQL3 Query control statements, which are

parsing into some operation codes into query graph model (QGM) representation of the

statements, from which they are then processed to optimized QGM, an access

execution plan such as cost-based optimized access plan and they are to be produced

operation code or opcode by code generation module (item 118): abstract, col. 1, lines

15-35, col. 6, lines 25-67· and col. 8, lines 8-58; also col. 10, lines 1-40);

determining from the access plan an executable function associated with a first

operation code (fig. 1, parser, the optimized QGM, and threaded code generation are

used to produce operation code of SQL query statements to get the optimized access

plan or access execution plan : figs. 1 and 2, item 115 & 118, col. 6, lines 25-67 and col.

8, lines 8-58, col. 14, lines 40-67 and col. 15, lines 1-67 and col. 16, lines 1-67); and

˙ augmenting said first operation code in the access plan with a pointer to said

executable function to provide a direct call mechanism replacing lookup function of a

runtime interpreter (figs. 1 & 2, the extracted SQL statement or control statements is

used to produce opcode based on parser, QGM and code generation and replacing this

opcode (fig.2 and col. 15, lines 45-67 and col. 17, lines 25-67); the executable function

in the run-time interpreter with a compiler generated local variables storing in symbol

table for looking up with referencing local variables or pointers or indexes: fig. 4, col. 24,

lines 36-67 and col. 25, lines 1-8; also, col. 15, lines 1-67, col. 17, lines 1-28, col. 20,

lines 1-45 and col. 21, lines 5-55).

With respect to claim 2, Chow teaches comprising repeating steps (a) and (b) for

remaining operation codes in the access plan (repeating the process with the SQL

query statements with loop statement each time the function statement is called: col. 10,

lines 12-18 and col. 12, lines 10-22).

With respect to claim 3,Chow teaches wherein said step (b) comprises

augmenting said first operation code in the access plan with a pointer to an intermediate

function, said intermediate function including a data structure for storing a pointer to

said executable function (replacing these opcode by a lookup function to look

referencing variables storing in the symbol table as the value of addressing or pointers:

fig. 4, col. 24, lines 36-67 and col. 25, lines 1-8).

With respect to claim 4, Chow teaches wherein said data structure includes

means for storing information associated with said executable function for said first

operation code (fig. 4, symbol table, item 130 & 119, col. 24, lines 36-67).

With respect to claim 5, Chow teaches wherein said step (b) comprises

augmenting said first operation code in the access plan with a second pointer to a data

structure, said data structure providing means for storing information associated with

said first operation code or said executable function (in the symbol table has more than

one local variables, each for each SQL query plan, thus there is a second pointer

associated with the local variable or operation code: fig. 4, col. 24, lines 36-67).

With respect to claim 6, Chow teaches wherein said step (a) further includes

assessing the executable function associated with the first operation code and if

applicable, replacing the call to the executable function with a call to a second

executable (call statement invoking the SQL statement and replacing the data

statement: col. 14, lines 38-67 and col. 15, lines 1-67).

With respect to claim 7, Chow teaches wherein said intermediate function

includes processing operations for the first operation code or the executable function

associated with the first operation code (col. 23, lines 45-67 and col. 24, lines 1-42).

With respect to claim 8, Chow teaches wherein said processing operations in the

intermediate function include gathering statistics on the user of the executable function

associated with the operation code (fig. 1, item 301, analyzer generating information for

the control flow and scopes and symbol table such as statistical information: col. 18,

lines 12-40).

Claim 10 is essentially the same as claim 1 except that it is directed to a

computer program product rather than a method, and is rejected for the same reason as

applied to the claim 1 hereinabove.

Claim 11 is essentially the same as claim 2 except that it is directed to a

computer program product rather than a method, and is rejected for the same reason as

applied to the claim 2 hereinabove.

Claim 12 is essentially the same as claim 3 except that it is directed to a computer program product rather than a method, and is rejected for the same reason as applied to the claim 3 hereinabove.

Claim 13 is essentially the same as claim 4 except that it is directed to a computer program product rather than a method, and is rejected for the same reason as applied to the claim 4 hereinabove.

Claim 14 is essentially the same as claim 5 except that it is directed to a computer program product rather than a method, and is rejected for the same reason as applied to the claim 5 hereinabove.

Claim 15 is essentially the same as claim 6 except that it is directed to a computer program product rather than a method, and is rejected for the same reason as applied to the claim 6 hereinabove.

Claim 16 is essentially the same as claim 7 except that it is directed to a computer program product rather than a method, and is rejected for the same reason as applied to the claim 7 hereinabove.

Claim 17 is essentially the same as claim 8 except that it is directed to a computer program product rather than a method, and is rejected for the same reason as applied to the claim 8 hereinabove.

Claim 19 is essentially the same as claim 1 except that it is directed to a system rather than a method, and is rejected for the same reason as applied to the claim 1 hereinabove.

Claim 20 is essentially the same as claim 3 except that it is directed to a computer program product rather than a method, and is rejected for the same reason as applied to the claim 3 hereinabove.

Claim 21 is essentially the same as claim 4 except that it is directed to a computer program product rather than a method, and is rejected for the same reason as applied to the claim 4 hereinabove.

Claim 22 is essentially the same as claim 5 except that it is directed to a computer program product rather than a method, and is rejected for the same reason as applied to the claim 5 hereinabove.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

9.   Claims 9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over

US Patent No.: 5,875,334 issued to Chow et al. (hereinafter Chow) in view of US Patent

No.: 6,077,312 issued to Bates et al. (hereinafter Bates).

        With respect to claim 9, Chow teaches a method as discussed in claim 1.

        Chow teaches a SQL query statement is processed through a query compiler for

generating a access executable plan for a database system such as IBM's DB2; this

process requiring a run-time interpreter and for looking up local variable; also this

executable plan includes a plurality of SQL3 Query control statement for parsing into

some operation codes from query graph model (QGM) representation of the statement

to produce an operation code based on access executable plan, replacing the

executable function in the run-time interpreter with a compiler generated local variable

for looking up the symbol table with referencing local variables or pointers. Chow does

not clearly teach a pause for receiving user input before or after the call to the

executable function.

        However, Bates teaches halt execution of a computer program when the

computer meets a predetermined criteria (abstract).

        Therefore, it would have been obvious to a person of ordinary skill in the art at

the time the invention was made to combine the teachings of Chow the teachings of

Bates. One having ordinary skill in the art would have found it motivated to utilize the

halt execution of a program when it is needed as disclosed (Bates' abstract), into the

system of Chow for the purpose of including a pause for executing a program to replace

opcode, thereby, helping to locate and identify errors in a program under development

(Bates' col. 1, lines 10-20).

Claim 18 is essentially the same as claim 9 except that it is directed to a

computer program product rather than a method, and is rejected for the same reason as

applied to the claim 9 hereinabove.

Contact Information

10.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh Ly whose telephone number is (571) 272-4039 or via E-Mail: ANH.LY@USPTO.GOV **or fax to (571) 273-4039 (Examiner's fax number).** The examiner can normally be reached on TUESDAY – THURSDAY from 8:30 AM – 3:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene, can be reached on (571) 272-4107 or **Primary Examiner Jean Corrielus (571) 272-4032.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see **http://pair-direct.uspto.gov**. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Any response to this action should be mailed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231, or faxed to: **Central Fax Center: (571) 273-8300**

JOHN BREENE
SUPERVISORY PATENT EXAMINER
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ANH LY
DEC. 9th 2005